

# **EVALUATION OF COMMON STOCK MUTUAL FUNDS**

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Finance 441  
Advanced Financial Institutions  
College of Business  
Illinois State University  
June 27, 1990

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## TOPICAL OUTLINE

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## **I. INTRODUCTION**

The mutual fund industry has experienced rapid growth throughout the 1980's. Mutual funds have experienced this rapid growth because they satisfy particular needs of investors. Mutual funds allow small investors the ability to obtain professional management of their investment. These funds also give investors diversification which reduces the risk level of their investment portfolio.

Efficient Market Theory states that for a given level of risk, no investor should be able to receive excess returns from the market [Radcliffe 1987]. Investors who believe in efficient markets should first select an acceptable risk level. They should then use this risk level to choose an acceptable stock-bond mix for their portfolio. The stock portion of their portfolio should be in an indexed common stock mutual fund. This indexed fund should mirror the risk and return of the general stock market [Radcliffe 1987].

Mutual funds are typically promoted to investors as being vehicles which offer both lower risk through diversification and higher returns because of professional management. If the Efficient Market Theory is correct, investors should choose an indexed common stock mutual fund because of lowered risk through diversification. Investors should not choose a non-indexed common stock fund because Efficient Market Theory says that professional management can not achieve excess returns.

This study examines common stock mutual funds and evaluates their risk-reward results to determine if professional management can achieve excess market returns.

## **II. MUTUAL FUNDS AS A FINANCIAL INSTITUTION**

Mutual funds have been in existence since 1928 [NoLoad Mutual Fund Association 1980]. The name "mutual fund" probably originated from the fact that small, individual investors can mutually benefit by pooling their resources with each other [Van Caspel 1988]. By pooling their investments, small investors can afford to hire professional managers to manage their funds. These professional managers can then diversify the investments which lowers the risk to the individual investors.

Most mutual funds are open-ended investment companies. They are called open-ended because they will both sell shares to investors and buy them back if the investor wishes [Corrigan and Kaufman 1984]. There are literally hundreds of mutual funds which have many different objectives. This study only focuses on mutual funds which primarily invest in U.S. common stocks.

Common stock mutual funds use investor's funds to purchase common stocks. Most common stock mutual funds will purchase stock in many different companies. The Fidelity Magellan Fund recently had \$9 billion invested in the common stock of

over 1400 companies [Lynch 1989].

The value of a share of a common stock mutual fund changes each day. This value is determined by first adding up the market value of all common stocks owned by the mutual fund. This total market value is then divided by the number of mutual fund shares outstanding. The price of every common stock mutual fund is reported daily in the Wall Street Journal.

Common stock mutual funds minimize risk for their investors through diversification. The pooling of investor's funds allows the mutual fund to purchase many different stocks which will then minimize risk. The small individual investor may not have enough funds to purchase enough different securities to minimize risk. Studies have shown that investors must own a minimum of about 20 different stocks to minimize risk [Radcliffe 1987].

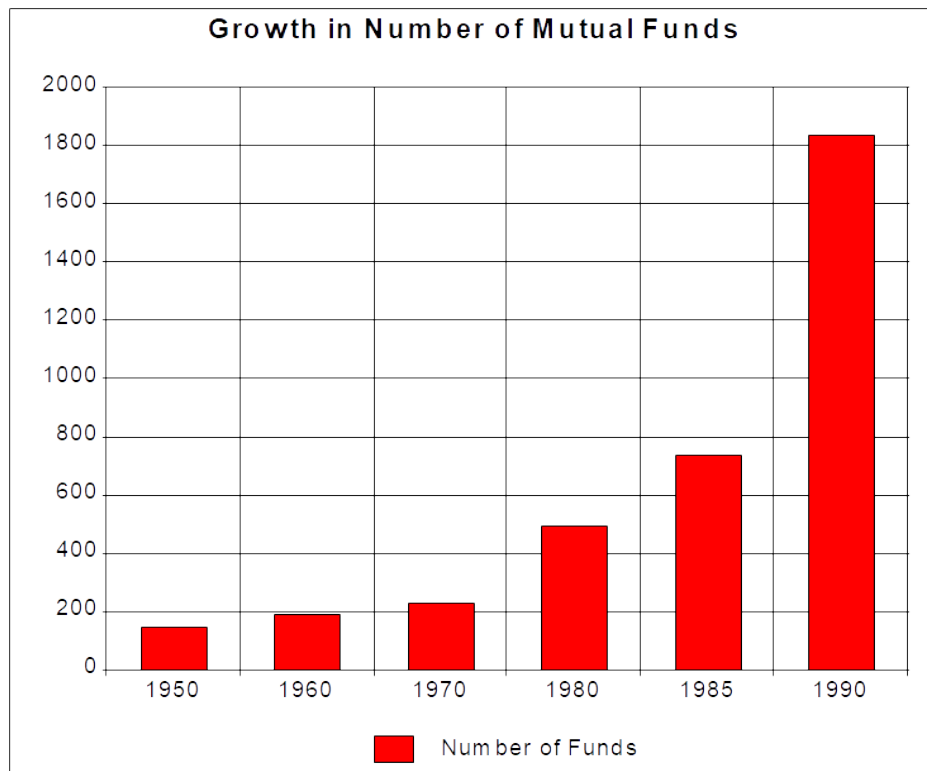
Mutual funds have become a financial institution because they satisfy a need. They act as an intermediary between investors and the secondary market for securities. Investors could deal directly with agents for the secondary securities market such as stock brokerage firms. Investors choose to use mutual funds because they fulfill the following needs of investors [Corrigan and Kaufman 1984; VanCaspel 1988]:

1. Investors may not have the time, training, or temperament to manage their own investments. By pooling their investments, investors can afford to hire professional managers to oversee their investments.
2. Investors may lack enough funds to diversify their investments to reduce risk. Investing in a mutual fund allows investors to diversify because funds typically own 40 to 1400 different common stocks.
3. Investors can get convenience and service from mutual funds. Most funds offer automatic investment and redemption plans.
4. Mutual funds are very liquid markets. Investors can easily and quickly buy and sell mutual funds.
5. Mutual funds allow investors to switch their investments from one type of fund to another if economic conditions change or the investor's objectives change.
6. Mutual funds offer simplified accounting to the investor. The mutual fund takes care of all bookkeeping, issues periodic statements, and provides tax records.

Mutual funds charge their investors for being an intermediary between them and the secondary securities markets. Funds typically charge 3/4 of 1% to 1.5% of the assets they manage [Corrigan and Kaufman 1984].

Because mutual funds do a good job of fulfilling investor's needs, they have experienced phenomenal growth as evidenced in the chart below [Wall Street Journal

1950, 1960, 1970, 1980, 1985, 1990]:



Along with the rapid growth in the total number of mutual funds, the amount of money managed by mutual funds has also been steadily increasing. In 1985, common stock mutual funds managed \$111 billion in assets [Forbes 1985]. By 1990, these common stock mutual funds managed \$167 billion in assets [Consumer Reports 1990].

The average size of a common stock mutual fund in 1990 is \$575 million [Consumer Reports 1990].

### III. RISK AND RETURN ANALYSIS OF COMMON STOCK MUTUAL FUNDS

Data sources for investors have historically only focused on the annual returns achieved by common stock mutual funds. Up until 1985, Money magazine only published annual mutual fund returns [Money 1985]. Before 1985, Money magazine did not provide investors with risk ratings of common stock mutual funds. For many years, Forbes magazine has published an annual review of mutual fund performance in its August or September issues. Forbes has included some small measure of risk in their annual review of funds. They examine how a fund changes in value in both bull and bear markets. Forbes then assigns a relative risk rating to their volatility in up and down markets [Forbes 1989].

The risk level of a mutual fund can be examined in at least six different fashions. The first method is called the Sharpe Performance Index [Radcliffe 1987]:

$$S_p = \frac{R_p - R_f}{\sigma_p}$$

Where:  $S_p$  = Sharpe index  
 $R_p$  = Avg portfolio return  
 $R_f$  = Risk free rate  
 $\sigma_p$  = Standard deviation of past portfolio returns.

Sharpe's index is based upon calculating an index which measures the return earned for a certain level of total risk. Sharpe's index is a meaningless number by itself. The index number must be compared with other portfolio index numbers. Sharpe's index allows investors to compare the riskiness of various portfolios.

A second method of calculating the risk level of a mutual fund is called the Treynor Performance Index [Radcliffe 1987]:

$$T_p = \frac{R_p - R_f}{\beta_p}$$

Where:  $T_p$  = Treynor Index  
 $R_p$  = Avg portfolio return  
 $R_f$  = Risk free rate  
 $\beta_p$  = Historical beta of portfolio

The Treynor Performance Index also allows investors to compare the relative

risks of various mutual funds. A third method of calculating a mutual fund's risk level is called the Jensen Performance Index [Radcliffe 1987]. This index is calculated by using regression analysis. The regression analysis examines a mutual fund's excess returns compared to excess returns earned by the general market. The resulting index number can be statistically tested to determine if a fund has delivered returns greater than the general market. This index allows investors to determine if a mutual fund has achieved risk adjusted returns which are greater than the S&P 500.

A fourth method of determining a mutual fund's risk level is to examine the fund's Beta [Business Week 1989]. Beta is a measure of the relative volatility of a mutual fund investment [The American Association of Individual Investors 1988]. This volatility is measured relative to the whole market. The whole market is usually defined as the S&P 500, which by definition has a Beta of 1.0. If a fund has a Beta equal to 1.0, it will move up and down with the S&P 500. If the fund's beta is between 0 and 1.0, the fund will not move up and down as much as the S&P 500. A fund with a Beta greater than 1.0 will move up and down more than the S&P 500. A fifth method of examining a mutual fund's risk is the Risk Adjusted Rate of Return (RAROR) [Winger and Frasca 1986]:

$$\text{RAROR} = \frac{\text{Unadjusted fund return}}{\text{Fund's beta}} - \text{S\&P 500 return}$$

RAROR is easy to use and allows investors to very quickly evaluate the risk adjusted return of mutual funds.

A sixth method of evaluating risk of mutual funds is to compare its actual past performance to its expected performance. Expected performance is calculated from the Capital Asset Pricing Model (CAPM)[Mutual Fund Sourcebook 1988]. The CAPM says the expected return of a fund should be:

$$\text{Expected return} = R_f + (R_m - R_f)\beta$$

Where  $R_f$  = Risk free rate  
 $R_m$  = Return of the market (S&P 500)  
 $\beta$  = beta of the fund

A fund's risk adjusted performance can therefore be defined as:

Fund's risk adjusted = Actual return -  $[R_f + (R_m - R_f)\beta]$   
performance

This CAPM method also allows investors to determine if a mutual fund is earning excess returns on a risk adjusted basis. Recent volatility in financial markets has caused investors to seek more information on the relative risk of mutual funds [Business Week 1989]. Investors are now looking at both historic returns and risk.

In 1984, the overseers of General Motor's \$17 billion pension fund changed the criteria for selecting managers. Their new objective is to hire managers whose performance is "consistently the best over time on a risk-adjusted basis" [Kinsman 1984].

Many organizations have responded to investor's needs for both risk and return information about common stock mutual funds. Money magazine has added a risk rating based on Sharpe's index to their yearly evaluation of common stock mutual funds [Money 1989]. Morningstar Inc. also provides both performance and the following risk information [Mutual Fund Sourcebook 1988]:

1. Beta of each mutual fund.
2. Standard deviation of each mutual fund.
3. Actual return earned above the CAPM predicted return.
4. Rating of funds by five classes for risk.

Beta values for funds are also available from the annual Individual Investor's Guide to No-Load Mutual Funds [The American Association of Individual Investors 1988]. Risk information can also be purchased from Lipper Analytical Services [Money 1987] and Interactive Data Corp. [Money 1985].



#### **IV. EFFICIENT MARKET THEORY**

Efficient Market Theory states that [Radcliffe, 1987]:

"the security market is a fair game: the odds of having a future return greater than should be expected given a security's risk are the same as the odds of having a lower return than should be expected -- 50%. There is no way to use the information available at a given time in order to earn an abnormal return. Long run abnormal returns will be zero."

Efficient Market Theory is a very controversial theory. If it is true, investors or investment managers can not earn excess returns for a given level of risk. This means that mutual fund managers can not earn excess returns for a given level of risk. If the Efficient Market Theory is correct, an investor should buy a broadly diversified portfolio of securities which matches the investor's desired risk level. The investor should only trade for tax reasons or if cash is needed.

Some investors believe in the Efficient Market Theory and are willing to accept the general risk in the stock market. These investors should purchase and hold a common stock mutual fund which is indexed to the S&P 500. This investment strategy is in direct conflict with the strategy advocated by common stock mutual funds. These funds promote their investments on the theory that professional management can consistently outperform the S&P 500.

These conflicting strategies are what make Efficient Market Theory so controversial. If the Efficient Market Theory is correct, investors should only invest in unmanaged indexed funds. There would not be a need for professional managers because they would be unable to beat the returns achieved by the indexed funds.

## **V. EFFICIENT MARKET THEORY AND HISTORICAL MUTUAL FUND RISK AND RETURN RESULTS**

Jensen did one of the first scientific studies which attempted to resolve the controversy over common stock mutual funds and Efficient Market Theory [Jensen 1968]. This study attempted to determine if mutual funds in the period of 1955-1964 had a better return for a given level of risk than a simple buy-hold procedure. Jensen's findings were:

1. The average mutual fund performed poorer than a buy-hold procedure of equal risk.
2. Funds which were superior to a buy-hold strategy in one period were usually poorer performers in later periods.
3. Funds which remained superior in both periods could have done so simply by chance.
4. There is no evidence to suggest that professional fund management is capable of beating a passive buy-hold strategy.

Another similar study was done by Radcliffe and focused on 255 common stock mutual funds for the period 1974-84 [Radcliffe 1984]. The findings of this study were:

1. The overwhelming number of mutual funds do not statistically outperform a reasonable proxy of the market portfolio (Wilshire 5000).
2. Only 18 out of 255 mutual funds were able to beat the passive buy-hold strategy with statistical significance. It was expected that 13 of the funds would have statistically significant excess returns due to chance alone.
3. No funds were found which statistically were consistently good or bad. There was no consistency in performance from period to period.

A study commissioned by the Wall Street Journal found the S&P 500 outperformed 87% of mutual fund managers for the period 1969-1979 [Smith 1984]. This study also found the S&P 500 outperformed 67% of mutual fund managers in the period 1972-1982. The Vanguard Group of Investment Companies hired Lipper Analytical Services to study the performance of common stock mutual funds over the period 1984 to 1988. They found that the S&P 500 outperformed 88% of the common stock mutual funds [Vanguard 1989].

Money magazine began publishing a list of ten All-Weather Funds in their 1985 issue [Money 1985]. Money updates this listing of recommended funds on a periodic basis. Using data from a recent listing of their top 10 stock funds, the following table was constructed [Willis 1988]:

	Non -	Risk*	Non -	Risk	Non -
	Adjusted	Adjusted	Adjusted	Adjusted	Adjusted
	3 Year	3 Year	5 Year	5 Year	10 Year
Fund	Return	Return	Return	Return	Return
=====	=====	=====	=====	=====	=====
1	8.3%	7.4%	15.6%	14.8%	---
2	8.1	7.1	15.4	14.1	5.29%
3	5.2	7.3	15.0	12.8	---
4	3.0	5.0	13.1	10.5	3.85
5	4.5	5.8	13.7	10.7	3.23
6	3.7	5.9	14.7	12.2	3.19
7	3.9	5.9	12.8	9.8	---
8	2.8	4.0	12.5	10.3	4.38
9	4.2	4.9	14.1	10.7	4.18
10	4.1	5.1	14.1	9.9	3.75
S & P 500	4.0	---	15.0	---	3.81

\*

Money used Sharpe's Index  
to calculate risk adjusted  
return.

A review of the table above showed the following:

1. On a risk adjusted basis, none of the 10 funds were able to achieve the five year return on the S&P 500.
2. On a risk adjusted basis, all 10 of the funds were able to better the three year S&P 500 return.
3. On an unadjusted five year basis, only three out of 10 funds were able to better the S&P 500 return.
4. On an unadjusted three year basis, six out of 10 funds were able to better the S&P 500.
5. On an unadjusted 10 year basis, four out of 10 funds were able to better the S&P 500. Note that three of the 10 funds were not in existence for 10 years.

Consumer Reports recently issued a review of 290 common stock mutual funds [Consumer Reports 1990]. They rated the performance of each fund over the last five years by putting each fund into one of five possible performance categories:

Class 1	Return was more than 40% above the S&P 500
Class 2	Return was 21 to 40% above the S&P 500
Class 3	Return was in a range 20% below the S&P 500 to 20% above the S&P 500
Class 4	Return was 21 to 40% below the S&P 500
Class 5	Return was more than 40% below the S&P 500

The data on the 290 common stock mutual funds was analyzed to determine if mutual funds can deliver consistently superior performance. The results of this analysis are shown in the following table:

## **CONSISTENCY OF PERFORMANCE OF MUTUAL FUNDS**

	1 Year	2 Years	3 Years	4 Years	5 Years
	out of	out of	out of	out of	out of
	5 years	5 years	5 years	5 years	5 years
=====					
Return more					
than 40%	43	2	0	0	0
above S & P 500					
=====					
Return 21-40%	29	3	0	0	0
above S & P 500					
=====					
Return +/-20%	69	49	33	8	1
of S & P 500					
=====					
Return 21-40%	115	56	14	2	0
below S & P 500					
=====					
Return more					
than 40%	60	61	59	42	24
below S & P 500					

\*

Vanguard Index Trust. An indexed mutual fund which mirrors the performance of the S&P 500.

The table above demonstrated that no mutual fund was consistently able to achieve returns greater than the S&P 500. Only two funds were able to achieve returns more than 40% above the S&P 500 for two years out of the five years studied. Only three funds could achieve returns 21 to 40% greater than the S&P 500 for two years out of the five years studied. Only eight out of the 290 funds studied were able to achieve performance that was within  $\pm 20\%$  of the S&P 500 for four out of five years. The only fund that was able to fall within  $\pm 20\%$  of the S&P 500 for all five years was a fund indexed to match the S&P 500.

## **VI. INDEXED COMMON STOCK MUTUAL FUNDS**

The failure of many common stock mutual funds to match the performance of the S&P 500 has prompted many investors to evaluate indexed funds [Clements 1990 and Updegrave 1988].

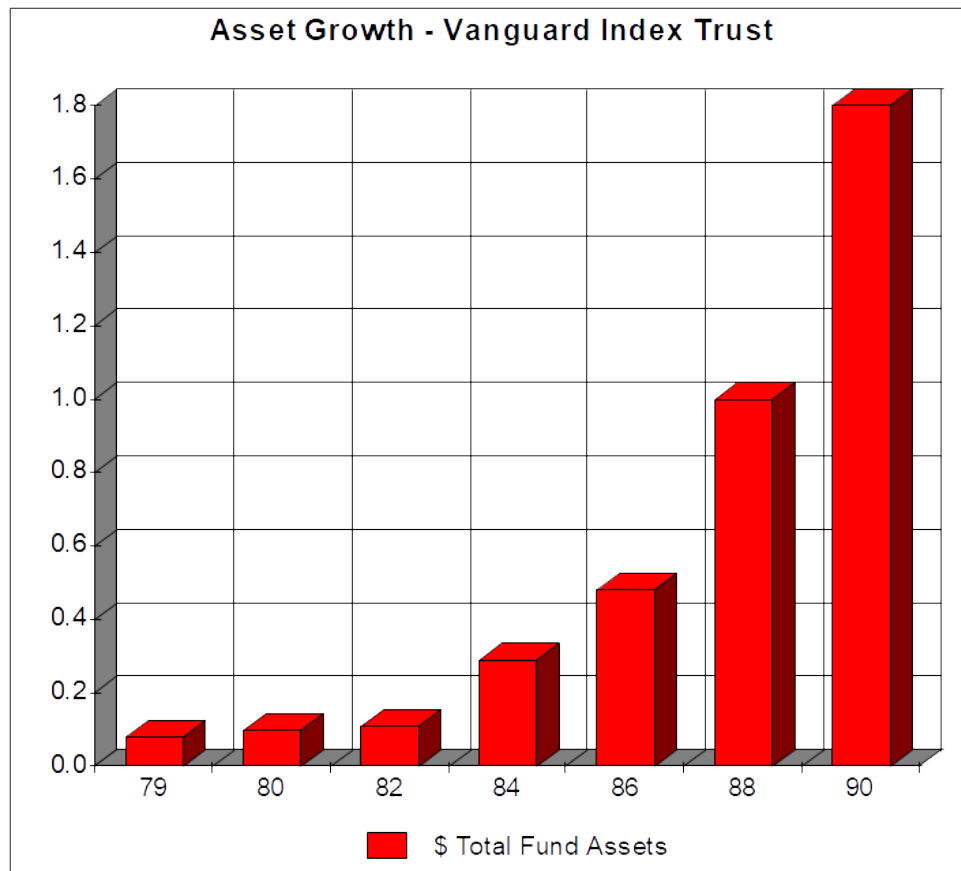
An indexed common stock mutual fund is a mutual fund designed to match the risk and return of a stock market benchmark index. There are several of these types of common stock mutual funds which strive to mimic the S&P 500, S&P 100, Nasdaq 100, Morgan Stanley Capital International Index, or the Wilshire 4500 [Clements 1990].

The largest and most popular indexed common stock mutual fund is Vanguard's Index Trust which seeks to match the S&P 500. It is a relatively large common stock mutual fund. In the beginning of 1990, it had \$1.8 billion in assets [Clements 1990]. The size of the average mutual fund in 1990 was \$575 million [Consumer Reports 1990].

Although Vanguard Index Trust is a relatively large fund, its total assets only represent about 1.08% of the assets invested in common stock funds [Consumer Reports 1990]. Vanguard Index Trust has a very low portfolio turnover rate of 8% [Clements 1990]. This means it only sells and replaces 8% of its stock holdings each year. This low number of transactions helps to hold down their management fees. Vanguard's management fee of .21% of assets is well below the industry average of 1.48% [Vanguard 1989].

Vanguard Index Trust actually purchases the same stocks in the same proportions as the S&P 500. This has resulted in risk and returns which have been virtually identical to the results of the S&P 500 [Consumer Reports 1990].

This fund has experienced rapid growth as shown below [Vanguard 1989]:



Note that in the above chart, the fund assets are shown in billions of dollars.

The popularity of the Vanguard Index Trust Fund has attracted competitors. In 1990, Fidelity introduced a common stock mutual fund called Spartan Market Index Fund which also mirrors the S&P 500 [Money 1990]. Dreyfus also introduced the Peoples Index Fund in 1990 which mirrors the S&P 500 [Money 1990].

## VII. SUMMARY

Mutual funds exist as a financial institution because they provide services which fulfill needs of investors. The services that common stock mutual funds provide include:

1. Professional management.
2. Diversification.
3. Liquidity.
4. Ability to switch assets from one fund to another.
5. Automatic investment plans.
6. Automatic redemption plans.
7. Simplified accounting.

To provide these services, common stock mutual funds typically charge  $\frac{3}{4}$  of 1% to 1.5% of the assets they manage.

Historically, investors have only evaluated the performance of common stock mutual funds. In recent years, investors have become much more concerned with the risks involved in mutual fund investments. There are at least six methods to evaluate the risk of common stock mutual funds:

1. Sharpe Performance Index
2. Treynor Performance Index
3. Jensen Performance Index
4. Beta
5. Risk Adjusted Rate of Return
6. Actual Versus CAPM Predicted Performance

There are now many sources of common stock mutual fund risk data available to investors. Investors can use this data to select funds which have acceptable risk adjusted performance rather than evaluating funds on performance alone.



The subject of Efficient Market Theory and common stock mutual funds is very controversial. Efficient Market Theory proposes that on a risk adjusted basis, common stock mutual fund managers can not achieve excess returns. Investors who believe in the Efficient Market Theory should choose the following investment strategy for their stock portfolio:

1. Buy a broadly diversified portfolio of securities which matches the investor's desired risk level. If the investor desires to assume the risk level of the market, the investor should purchase a common stock mutual fund indexed to the market such as the S&P 500.
2. The investor should only trade securities for tax reasons or if cash is needed.

Investors who do not believe in the Efficient Market Theory should choose the following investment strategy:

1. Evaluate common stock mutual funds and select those funds which give the highest return for a given risk level.
2. Allow the common stock mutual fund manager to outperform the market by buying and selling securities.

A thorough review of the existing studies regarding common stock mutual funds and Efficient Market Theory indicates strong support for the Efficient Market Theory. Academic studies, Wall Street Journal studies, and studies conducted in this paper lend support to the Efficient Market Theory.

Because of the inability of common stock mutual funds to outperform the S&P 500, indexed common stock mutual funds have gained popularity in recent years. These funds offer investors the ability to match major market benchmarks such as the S&P 500. Because these funds are unmanaged and have very low portfolio turnover, their fees are extremely low. Because of increased popularity, both Fidelity and Dreyfus have introduced indexed common stock funds to challenge Vanguard.

For those investors who do not have complete confidence in the Efficient Market Theory, a compromise strategy is available. Investors can compromise by allocating only a portion of their stock portfolio to indexed common stock mutual

funds. Investors can allocate the remaining portion of their stock portfolio to those mutual funds they believe have a good chance of outperforming the market on a risk adjusted basis. Using this compromise strategy assures the investor that he will match the S&P 500 with at least some portion of his stock portfolio.

Common stock mutual funds will continue to adapt to fit the needs of investors. It is projected that common stock mutual funds will continue to experience rapid growth in the decade ahead [Coletti 1989]. As long as common stock mutual funds continue to fulfill investor's needs, they will continue to be a valuable financial institution.

## VIII. ANNOTATED BIBLIOGRAPHY

American Association of Individual Investors. The individual investor's guide to no-load mutual funds. Chicago: International Publishing, 1988.

An annual publication which provides investors with information on no-load mutual funds. This information includes mutual fund performance and beta values for each fund.

Annual mutual fund survey. Forbes, September 16, 1985, pp. 76-118.

Forbes magazine publishes an annual review of mutual funds in its August or September issue. Included in this review is past performance data. There is also a measure of how each fund has done in up and down markets.

Annual fund ratings. Forbes, September 4, 1989, pp. 196-237.

Forbes magazine publishes an annual review of mutual funds in its August or September issue. Included in this review is past performance data. There is also a measure of how each fund has done in up and down markets.

Clements, J. Index mutual funds step into the spotlight. Wall Street Journal, March 6, 1990, p. C1.

This article points out that indexed common stock mutual funds have recently become more popular. This popularity is primarily caused by the success of Vanguard's fund which is indexed to the S&P 500. Many investors have noticed that the S&P 500 outperformed 75% of the mutual funds during the 1980's. Vanguard's management fee of .21% is well below the 1.5% fee typically charged by

common stock mutual funds.

Coletti, R. J. Forging ahead. Financial World, December 26, 1989, pp. 72-74.

Mutual funds did well in 1989 and are predicted to do well in the 1990's. During 1989, two mutual fund giants, Fidelity and Dreyfus, began a price war to attract investors to their money market mutual funds. It is predicted that although the assets controlled by mutual funds will increase,

there will be a reduction in the number of funds through consolidation.

Corrigan, A. & Kaufman, P. C. Understanding mutual funds. Connecticut: Longmeadow Press, 1984.

This book reviews the fundamentals of mutual fund investing. It explains the various types of mutual funds and how they operate. It also reviews the advantages and disadvantages of mutual fund investing. The book is aimed at investors who have no previous knowledge of mutual fund investing.

How savvy fund investors tally the risk. Business Week, October 2, 1989, p. 118

Many investors are now using beta values to assess the risk of mutual funds. Beta tracks how closely a fund follows the ups and downs of the stock market. The article points out that beta is only applicable to U.S. equities and does not apply to mutual funds investing in gold. Beta values of mutual funds can be purchased from Morningstar Inc. Investors can purchase three months of data for \$55.00.

Indexing: a tough-to-beat investment strategy for today's more informed investor. Valley Forge: Vanguard Financial Center, 1989.

This is a four page sales brochure which accompanies the prospectus to Vanguard's Index Trust fund. This fund mirrors the S&P 500. It includes data from Lipper Analytical Services regarding how many mutual funds do not match the performance of the S&P 500. This brochure also says that its management fee of .21% is well below the average mutual fund fee of 1.48% as reported by Lipper Analytical Services.

Jensen, M. C. The performance of mutual funds in the period 1945-64. *Journal of Finance*, May 1968

Jensen did one of the first thorough studies of historical mutual fund performance. He found very little evidence that professional management could consistently outperform a simple buy-hold strategy. These results gave strong support to Efficient Market Theory.

Kinsman, R. There is a beta way. *Barron's*, October 15, 1984, p. 15.

This article illustrates a method of risk adjusting the returns of mutual funds. An investor can divide the historic annual return of a fund by its beta value. This result can then be compared to the S&P 500 return. The use of this method allows investors to compare the relative risk and returns of various funds. The article also pointed out that more investors are becoming concerned about the risks of their investments. The overseers of General Motors' pension fund changed one of their objectives to account for risk and performance when hiring new managers.

Lynch, P. S. *One up on Wall Street*. New York: Simon &

Schuster Inc., 1989.

The author of this book is Peter Lynch, the manager of the highly successful \$9 billion Fidelity Magellan Fund. The book explains the investing philosophy that Lynch used while running this mutual fund. Lynch believes that the average investor has advantages over the professional investor. They have an advantage because they work and shop in local companies. Being so close to local companies allows average investors to discover good investments before the professional investors find them.

Mutual funds 1990. Consumer Reports, May 1990, pp. 330-341.

This article rated the performance and risk of 290 common stock mutual funds. Each fund was classified as being in one of five performance categories. Funds which did more than 40% better than the S&P 500 were assigned to category one. Funds which were 20 to 40% better than the S&P 500 were placed in category two. Funds which achieved returns within  $\pm 20\%$  of the S&P 500 were placed into category three. Category four was funds which did 20 to 40% worse than the S&P 500. Category five was funds which did more than 40% below the S&P 500. A risk rating was calculated based on how well a fund did in two down market periods. The total assets of each fund were also given.

Mutual fund sourcebook. Chicago: Morningstar, Winter 1988.

Morningstar Inc. publishes a quarterly listing of information about 700 common stock mutual funds. This information includes past performance history and risk information. Risk information includes beta and risk adjusted returns. They also include a comparison of actual returns versus the

return predicted from the Capital Asset Pricing Model. The cost of this quarterly publication is \$55.00. Many libraries subscribe to this service.

NoLoad Mutual Fund Association. Your guide to mutual funds without sales charges, 1980 Directory, Valley Forge, Pa., 1980.

The NoLoad Mutual Fund Association publishes an annual directory of all no-load mutual funds. They will mail this directory to investors at no charge. The annual directories contain information about all types of no-load mutual funds. Typical information is names and addresses of funds, minimum investment required, size of funds, and investment objective of each fund. They also list other services provided by the funds.

Peoples Index Fund, Advertisement, Money, June 1990.

This was a full page advertisement in Money magazine paid for by Dreyfus. The purpose of the advertisement was to promote a new common stock mutual fund indexed to the S&P 500.

Radcliffe, R. C. Investment: concepts, analysis, and strategy. Glenville: Scott, Foresman and Company, 1987.

This textbook is typically used to teach finance to graduate level college students. It focuses on investments including the Capital Asset Pricing Model, Efficient Market Theory, and portfolio management.

Smith, R. S&P 500 bests many managers in '83, sharpening debate on investment tactics. Wall Street Journal, January 20, 1984, p. 27.

This article reviews how well common stock mutual fund managers have done compared to the S&P 500 from 1970-1982. The S&P 500 outperformed the average manager in 12 of the 13 years studied. The article reviews the debate over whether active portfolio management can outperform passive portfolio management.

Spartan Market Index Fund, Advertisement, Money, June 1990.

This was a full page advertisement in Money magazine paid for by Fidelity. The purpose of the advertisement was to promote a new common stock mutual fund indexed to the S&P 500.

Stalwart performers - rain or shine. Money, June 1985, pp. 183-186.

Money magazine developed a list of 10 common stock mutual funds that performed well on a risk adjusted basis. They calculated the risk adjusted return based on Sharpe's index. This was the first time that Money provided common stock mutual fund risk information to investors.

Ten all-star funds for all seasons. Money, June 1987, pp. 111-118.

This was an updated list of 10 common stock mutual funds that performed well on a risk adjusted basis. They studied risk and return over a five year period.



The alphabetical guide to 900 mutual funds. Money, August 1989, pp. 102-113.

Money magazine usually publishes an annual review of the performance of common stock mutual funds. This review included placing each mutual fund into one of five risk categories.

The facts about market indexing. The Vanguard Group of Investment Companies, 1989.

This is a four page sales brochure which accompanies the prospectus to Vanguard's Index Trust fund. This fund mirrors the S&P 500. It includes data from Lipper Analytical Services regarding how many mutual funds do not match the performance of the S&P 500. Lipper Analytical Services found that the S&P 500 outperformed 88% of common stock mutual funds in the five year period of 1984-1988.

Updegrave, W. L. Seven tough questions you answer now. Money, February 1988, pp. 134-142.

This Money magazine article addressed concerns that investors had after the October 1987 stock market crash. It reviews the advantages and disadvantages of investing in an indexed common stock mutual fund. The article recommends Vanguard's Index Trust Fund for those investors who want to invest in indexed funds.

VanCaspel, V. Money dynamics for the 1990s. New York: Simon & Schuster Inc., 1988.

Venita VanCaspel is a well know personal investment advisor. Her book explains investments and financial planning. Most types of investments are explained and reviewed.

Vanguard Index Trust, Prospectus, April 28, 1989.

This is a prospectus on Vanguard's Index Trust Fund. This common stock mutual fund is indexed to the S&P 500. The SEC requires that mutual funds provide specific financial information to investors before they make an investment. The prospectus contains information regarding size of the fund, minimum investments, and other services provided by the fund.

Wall Street Journal, Listing of Investment Companies, January 3, 1950, p. 16.

The Wall Street Journal lists the price of one share of every common stock mutual fund. This price changes daily because the price of the stocks owned by the mutual fund changes daily. In 1950, the Wall Street Journal referred to mutual funds as investment companies.

Wall Street Journal, Listing of Mutual Funds, January 5, 1960, p. 20.

The Wall Street Journal lists the price of one share of every common stock mutual fund. This price changes daily because the price of the stocks owned by the mutual fund changes daily. By 1960, the Wall Street Journal had changed the title of this section from investment companies to mutual funds.

Wall Street Journal, Listing of Mutual Funds, January 2, 1970, p. 15.

This is the section of the Wall Street Journal listing the share price of all mutual funds.

Wall Street Journal, Listing of Mutual Funds, January 2, 1980, p. 21.

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Wall Street Journal, Listing of Mutual Funds, January 2, 1985, p. 26.

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This is the section of the Wall Street Journal listing the share price of all mutual funds.

Willis, C. The new money all-weather funds. Money, August 1988, pp. 101-105.

This was an updated list of 10 recommended common stock mutual funds. It included risk adjusted returns for the previous three years and five years. They used Sharpe's index to calculate risk adjusted returns.

Winger, B. J. and Frasca, R. R. Personal finance: an integrated planning approach. Columbus: Charles E. Merrill Publishing, 1986, pp. 525-527.

This textbook covers all areas of personal finance. It is used to teach personal finance to college undergraduates.